**VHSL Regular Season 2016-2017 - Round 19 - First Period, Fifteen Tossups**

1. These pieces often have a long "Sequenza" movement that ends with a "Pie Jesu" (PEE-ay "YAY"-soo). Franz Süssmayr ("ZEUS" "meyer") completed an unfinished piece in this genre, which often has a "Dies Irae" (DEE-ess EE-ray) and take its name from the Latin for "rest." Mozart feared that he was writing one of these pieces to himself, and later died midway through its composition. For 10 points, name this genre of sacred choral music, a mass for the dead.
ANSWER: **requiem** [or **requiem mass**; or **missa pro defunctis**; or **mass for the dead** before "mass for the dead"; do not accept "mass"]

2. This king was opposed by the Pilgrimage of Grace, which objected to his minister Thomas Cromwell's policies targeting monasteries. Early in his reign, his Lord Chancellor was the powerful Cardinal Thomas Wolsey. Under the Act of Supremacy, this man became the head of the Church of England as part of a scheme to get a divorce and marry Anne Boleyn. For 10 points, what Tudor king of England was married six times?
ANSWER: **Henry VIII** [prompt on Henry]

3. Jerome Lawrence and Robert Edwin Lee wrote a play about the night this man spent in jail. This author wrote, "That government is best which governs least," in an essay about how he was jailed for refusing to pay a poll tax in support of the Mexican-American War. For 10 points, name this Transcendentalist who was friends with Ralph Waldo Emerson and wrote "Civil Disobedience."
ANSWER: Henry David **Thoreau**

4. This city contains a square called a Plaza of "the Three Cultures." It has made efforts to improve its air after a 1992 UN report called it "the most polluted city on the planet." A memorial museum here honors student protesters killed before the 1968 Olympics. Other historic sites in this city include the ruins of the ancient Templo Mayor (my-ORR). For 10 points, name this largest Spanish-speaking city in the world, the capital of the United States' southern neighbor.
ANSWER: **Mexico** City [or the City of **Mexico**; or Ciudad de **Mexico**]

5. Rolle's theorem states that a differentiable function has a tangent that is this kind of geometric object. An exponential function can have an asymptote that is this type of geometric object. It names a test used to see if a function is injective, or one-to-one. The mid-line of a sinusoidal function is of this type. The line defined by the equation y equals two is of this type. For 10 points, name this kind of line with a slope of zero and which is perpendicular to a vertical line.
ANSWER: **horizontal line** [or **horizontal** after "line" is read; prompt on line until "exponential" is read]

6. A goddess who presides over this season was forced to choose her husband solely by looking at his feet, leading her to wed Njord (NEE-ord). That goddess of this season is Skadi. In Greek myth, this season corresponded to the time that Persephone (PURR-seff-UH-nee) spent in the underworld, leaving the world in a lifeless state. For 10 points, name this season during which Skadi is sometimes illustrated on skis.
ANSWER: **winter**

7. A type of bonding named for this class of elements occurs when free, or delocalized, electrons are shared among atoms in a lattice, forming an "electron sea". These elements can be made corrosion resistant by anodizing them. These generally lustrous elements have high ductility, malleability, and conductivity. For 10 points, the term for the central block of elements on the periodic table is named for what type of element term and prefixed with "transition"?
ANSWER: **metal**s

8. People's attempts to leave this settlement were stopped on the "Day of Providence" when Baron De La Warr arrived. Christopher Newport arrived at this location on the ship *Susan Constant*. Only 60 out of the original 214 people here survived the "Starving Time" in 1609. This colony was led by John Smith, who had once been legendarily saved by Pocahontas. For 10 points, name this Virginia location, the first permanent English settlement in the Americas.
ANSWER: **Jamestown** [prompt on the Colony of Virginia until it is read]

9. This actor played Mr. Rochester opposite Mia Wasikowska (WAH-sih-KAHV-skuh) in the 2011 adaptation of *Jane Eyre.* This actor played Bobby Sands in Steve McQueen's *Hunger*, and he appeared as Edwin Epps, Solomon Northup's cruel owner, in the later McQueen film *12 Years a Slave.* For 10 points, name this German-Irish actor who, in the most recent X-Men movies, has played Magneto (MAG-neet-OH).
ANSWER: Michael **Fassbender**

10. This hero's weapon was a lance called Ascalon. According to legend, this hero may have killed a monster on the slope of White Horse Hill in Uffington. He killed a monster who menaced the pagan residents of Silene by protecting himself with the sign of the cross and then converting the town to Christianity afterwards. For 10 points, what supposedly martyred Roman soldier is also the patron saint of England who legendarily killed a mighty dragon?
ANSWER: Saint **George**

11. In this modern day state, Josiah Winslow killed hundreds in the Great Swamp Massacre. Metacomet, a tribal leader known as King Philip, died in what became this state. It was the thirteenth and last state to ratify the Constitution. After being banished from the Massachusetts Bay Colony for their religious views, Roger Williams and Anne Hutchinson founded the colony that became this state. For 10 points, Providence became the capital of what U.S. state?
ANSWER: **Rhode Island** [or State of **Rhode Island** and Providence Plantations]

12. This composer wrote the "Nightingale Chorus" for a piece about King Solomon that also includes "The Arrival of the Queen of Sheba." He evoked a sailor's dance in the "Alla Hornpipe" movement of a suite written to accompany a barge down the River Thames, titled *Water Music*. In another of his pieces, a chorus cries "And he shall reign forever and ever." For 10 points, name this composer of *Messiah*, which includes the "Hallelujah" chorus.
ANSWER: George Frideric **Handel** [or Georg Friedrich **Händel**]

13. According to the clathrate (KLATH-rayt) gun hypothesis, the release of this gas from oceanic clathrates (KLATH-rayts) was responsible for the Permian-Triassic extinction. This simplest alkane (AL-kayn) is the main component of marsh gas. A key contributor to the level of this gas in the atmosphere is cow farts and cow burps. For 10 points, what potent greenhouse gas is the primary component of natural gas and has chemical formula C H 4?
ANSWER: **methane** [or **CH4** until it is read]

14. A poem by this author divided into eight "fits" concludes that the title creature "*was* a Boojum." In another poem by this author, one of the title characters says "the time has come…to talk of many things: of shoes – and ships – and sealing-wax – of cabbages – and kings." For 10 points, name this poet of nonsense verses like "The Walrus and the Carpenter" and "Jabberwocky" who wrote *Alice's Adventures in Wonderland.*
ANSWER: Lewis **Carroll** [or Charles Lutwidge **Dodgson**]

15. These things are distinguished mainly by their place of articulation, manner of articulation, and voicing. They are produced with complete or partial closure of the vocal tract, and are called stops if there is complete closure. Fricatives are these things produced by forcing air through a narrow channel. There are 21 of these sounds in the English alphabet, although W and Y sometimes work in a different way. For 10 points, name these sounds contrasted with vowels.
ANSWER: **consonants**

 **VHSL Regular Season 2016-2017 - Round 19 - Directed Period**

1A. What year in the 1960's was marked by worldwide political chaos, including May protests, strikes, and student-led occupations of universities in France?
ANSWER: **1968**

1B. What line named for two surveyors forms part of the Pennsylvania-Maryland border and once symbolically divided the North and South?
ANSWER: **Mason-Dixon** line

2A. What Indonesian term denotes a slurry of pyroclastic material and water that descends rapidly down the slope of a volcano, similar to a mudflow?
ANSWER: **lahar**

2B. Nephthys (NEFF-tees) was the wife of what Egyptian god of chaos and evil, who murdered his own brother, Osiris?
ANSWER: **Set** [or **Seth**]

3A. This is a 20-second calculation question. Consider a coin with a sixty percent chance of turning up heads when flipped. If the coin is flipped five times, what's the expected number of times the coin will turn up heads?
ANSWER: **3**

3B. This is a 20-second calculation question. If one of the exterior angles of a parallelogram is seventy degrees, what are the measures of its four interior angles?
ANSWER: **70 degrees**, **70 degrees**, **110 degrees**, **110 degrees**

4A. Characters such as Oedipus (ED-uh-PUSS) and Icarus exhibit what quality, which the Greeks defined as "excessive pride"?
ANSWER: **hubris** (HOOB-riss)

4B. Joseph Ratzinger became the sixteenth pope to use what name?
ANSWER: **Benedict**

5A. What name is shared by the tectonic plate to the west of South America and a group of massive Peruvian "lines"?
ANSWER: **Nazca**

5B. The Latin words *quercus* (KWER-suss) and *acer* refer to specific examples of what kind of living thing?
ANSWER: **tree**s [prompt on plants]

6A. What term describes a polygon that is equilateral and equiangular?
ANSWER: **regular** polygon

6B. What art style is exemplified by New York City's Empire State Building and Chrysler Building?
ANSWER: **Art Deco**

7A. Two episodes named "My Struggle" were part of a 2016 revival of what TV series, which starred Gillian Anderson as Dana Scully?
ANSWER: *The* ***X-Files***

7B. What dimensionless quantity between zero and one is defined as the amount of light that a planet or astronomical body reflects?
ANSWER: **albedo** (al-BEE-doh)

8A. This is a 30-second calculation question. What are the solutions of the equation the absolute value of the quantity two x minus seven is equal to three?
ANSWER: x equals **five** and x equals **two** [both answers required]

8B. This is a 30-second calculation question. Alice and Bob are playing Frisbee. Alice throws the Frisbee twenty feet due north to Bob. Bob then throws the Frisbee an unknown distance due east. If Alice walks directly to the Frisbee in the direction north sixty degrees east, how far east did Bob throw the Frisbee?
ANSWER: **20sqrt(3) feet** [or **20 times the square root of 3 feet**]

9A. Lord Byron wrote a satirical epic about what legendary Spanish seducer?
ANSWER: **Don Juan** (can be pronounced Don JOO-won)

9B. What American writer and inventor of bifocals wrote the "Silence Dogood" letters and a famous autobiography?
ANSWER: Benjamin **Franklin**

10A. What organization, whose acronym either contains the words "Levant" or "Syria," is also known as Daesh (DAYSH)?
ANSWER: **ISIS** [or **ISIL**; or **Islamic State of Iraq and the Levant**; or **Islamic State of Iraq and Syria**]

10B. What modern Greek novelist wrote *The Last Temptation of Christ* and *Zorba the Greek*?
ANSWER: Nikos **Kazantzakis** (NEE-kohs kah-zunt-ZAHK-is)

 **VHSL Regular Season 2016-2017 - Round 19 - Third Period, Fifteen Tossups**

1. This physicist created a device that generates a high voltage by having a primary coil and secondary coil separated by a spark gap. This physicist's Wardenclyffe Tower was an early attempt at wireless communication that failed when Guglielmo Marconi attracted more investors. George Westinghouse licensed this man's designs of an alternating current motor and transformer. For 10 points, what rival of Thomas Edison names an electric car company?
ANSWER: Nikola **Tesla**

2. In the first part of a play by this author, the title character is followed home by a demon in the shape of a poodle and later seduces a girl named Gretchen. This author wrote a wildly popular novel about a young artist who falls in love with Lotte (LOT-tuh). The title character of a two-part closet drama by this author makes a pact with Mephistopheles (MEFF-uh-STOFF-uh-LEEZ). For 10 points, name this German poet and playwright, the author of *Faust.*
ANSWER: Johann Wolfgang von **Goethe** (GURR-tuh)

3. A shield in this painting contains the names of the *Kloveniers* (KLOE-ven-EERS) that it depicts. Willem van Ruytenburch stands to the left of the most prominent man in this painting. A girl in this painting carries the title group's ceremonial drinking horn and a symbol of a defeated enemy, a dead chicken. The dark varnish on this painting led to its common but misleading name. For 10 points, name this painting by Rembrandt of a militia company.
ANSWER: *The* ***Night Watch*** [or *The* ***Shooting Company*** *of Franz Banning Cocq and Willem van Ruytenburch* or ***Militia Company of District II*** *under the Command of Captain Frans Banning Cocq*]

4. A leader of this state edited the Ems Telegram in order to incite another country into declaring war on it. A victory by this state resulted in another country forming the Third Republic after the Battle of Sedan. This was the most powerful state in a confederation that defeated Napoleon III and the French in an 1870's war. For 10 points, what kingdom became a dominant force in the German Empire under its king Wilhelm I and chancellor Otto von Bismarck?
ANSWER: **Prussia** [prompt on Germany; prompt on German Empire]

5. This writer's travelogues include *A Tramp Abroad*, *Roughing It*, and *The Innocents Abroad*. In one of his novels, Tom Canty and Edward VI trade lives as a result of swapping clothes. He also wrote about a boy who travels down the Mississippi on a raft with the runaway slave Jim. For 10 points, name this American novelist, the creator of Huckleberry Finn and Tom Sawyer.
ANSWER: Mark **Twain** [or Samuel Langhorne **Clemens**]

6. The frequency of this phenomenon is represented by p-squared and q-squared, but not 2pq, in the Hardy-Weinberg equation. This phenomenon is required for a given trait in true-breeding organisms and typically must be present to express a recessive phenotype (FEE-no-type). For 10 points, name this phenomenon in which a given locus on homologous chromosomes has identical alleles (uh-LEELZ), in contrast to heterozygosity (het-uh-ro-zy-GOSS-uh-tee).
ANSWER: **homozygosity** [or word forms such as **homozygous**]

7. A king with this name tried to use the Pains and Penalties Bill to divorce his wife, Caroline. This is the name of the last British king to personally lead troops into battle. This was the royal name used by the first British king from the German-based House of Hanover. The Prince Regent ruled the country because of the mental illness of the third British king with this name. For 10 points, what was the name of the British king during the American Revolution?
ANSWER: **George** [or **Georg**; or **George Louis**; or **Georg Ludwig**; or **George I**; or **George II**; or **George III**; or **George IV**]

8. A president of this modern-day country was killed after the CIA backed a coup (KOO) that attacked the Gia Long Palace. In 1978, this country invaded a neighbor to overthrow Pol Pot's Khmer (KUH-mer) Rouge government. In protest of the Diem government here, a Buddhist monk set himself on fire in a busy street in June 1963. For 10 points, what Asian country's largest city is named for revolutionary leader Ho Chi Minh?
ANSWER: Socialist Republic of **Vietnam** [or North **Vietnam**; or South **Vietnam**; or the Democratic Republic of **Vietnam**; or the Republic of **Vietnam**; or **SRV**]

9. One of these events was caused when a man threw a handful of soot from a furnace and it turned into dust. In order to avoid the last of these events, a group of people were ordered to mark their doors with lamb's blood. One of these events consisted of three days of darkness, while another of them caused the death of the firstborn son of the Pharaoh. For 10 points, name these pestilences from the Book of Exodus.
ANSWER: Ten **Plagues** of Egypt [prompt on boils]

10. Karl Weierstrass (WIRE-stross) formalized this field of study by using epsilon-delta proofs to remove the need for infinitesimals. Gottleib Leibniz is usually credited as one of the pioneers of this discipline, and for introducing the stretched "s" sign to indicate a sum. This science, whose name comes from a word meaning "little stone," studies integrals and derivatives of functions. For 10 points, name this branch of mathematics that studies rates of change.
ANSWER: **calculus** [prompt on mathematics until "little" is read]

11. In a tragedy written in this language, the title widow of the King of Judah becomes a Baal-worshipper. The neoclassical playwright of *Andromache* (an-DRAH-muh-kee) and *Phaedra* (FAY-druh) wrote in this language. A comic playwright who wrote in this language created a religious hypocrite who takes advantage of Orgon in his play *Tartuffe* (tar-TOOF). For 10 points, name this language used by the playwrights Jean Racine (rah-SEEN) and Moliere.
ANSWER: **French**

12. A scale for this quantity defines it as the average of an element's first ionization energy and electron affinity. The polarity of a bond is quantified by comparing the values of this quantity for the constituent atoms. On Linus Pauling's scale for this quantity, cesium and francium have the lowest values at 0.7 and fluorine has the highest at 4.0. For 10 points, what quantity is a measure of an atom's ability to attract electrons?
ANSWER: **electronegativity** [or **chi**]

13. A massive canal system named for this river irrigates the Doab region between it and the Yamuna River. The ancient city of Pataliputra (POOH-tall-la-POOT-ra) was built on this waterway. The Kumbh (KOOM) Mela is a mass pilgrimage where people ritually bathe in it. The city of Varanasi releases millions of liters of untreated human sewage into this river each day. For 10 points, what river in India is the most sacred to Hindus?
ANSWER: **Ganges** River [or **Ganga** River]

14. This team won its first championship in 1977 led by center Bill Walton. This team currently plays in the Moda Center, which was formerly called the Rose Garden. In the 2007 NBA Draft, this team used the number one pick to select Greg Oden. Following the retirement of Brandon Roy and the departure of Lamarcus Aldridge, this team is now led by point guard Damian Lillard. For 10 points, name this NBA team based in Oregon.
ANSWER: Portland **Trail Blazers** [or **Blazers**; or **Portland**]

15. This state's largest city employed Darnell Earley as its public schools' emergency manager, who was opposed with organized teacher sickouts. Earley previously worked for a city in this state where 87 cases of Legionnaires' disease were reported from 2014 to 2015. Its governor, Rick Snyder, declared a public health crisis after a city experienced high levels of lead in drinking water. For 10 points, a crisis in the city of Flint occurred in what Midwestern state?
ANSWER: **Michigan**

 **VHSL Regular Season 2016-2017 - Round 19 - Tiebreaker Questions**

1. George Fox placed spiritual importance on the "inner" type of this phenomenon, which became a doctrine of the Quakers. A parable is named for salt and this phenomenon, about which Jesus said that his followers would become that "of the world." It is created in the third verse of the Book of Genesis. For 10 points, name this phenomenon, about which God says "Let there be" it.
ANSWER: **light**

2. The law of mass action applies when this condition holds. Le Chatelier's principle states that systems will react to a change in conditions by shifting towards this condition. The reaction quotient Q is equal to the constant K for a system in this condition. Its dynamic type occurs when the forward reaction rate equals the reverse reaction rate. For 10 points, at what chemical condition does the concentration of products and reactants not change with time?
ANSWER: chemical **equilibrium**

3. A leader of this city said the laws "afford equal justice to all" in a funeral oration for those killed in war. Its council of elders met at a rock outcropping called the Areopagus (AR-ee-oh-PAY-gus). This city's constitution was created by Solon, and its first lawgiver was noted for his harsh rules and was named Draco. For 10 points, what ancient Greek city-state was led by Pericles and is where both the Parthenon and Acropolis were located?
ANSWER: **Athens**

4. After falling in love with this character, an actress loses her ability to play Juliet convincingly. This character is corrupted by a book wrapped in yellow paper given to him by Lord Henry Wotton. This character stabs the artist Basil Hallward after showing him a picture he painted. For 10 points, name this title character of an Oscar Wilde novel whose stays perpetually youthful as his portrait ages.
ANSWER: **Dorian** Gray [or Dorian **Gray**]

5. A composer from this country depicted broomsticks coming to life in his piece *The Sorcerer's Apprentice*. Another composer from this country wrote *Pavane for a Dead Princess* in addition to a lengthy piece in which the same two themes are incessantly repeated over a recurring snare drum rhythm. Another of its composers is best-known for his "Clair de lune". For 10 points, name this country home to Paul Dukas, Maurice Ravel, and Claude Debussy (DEB-ooh-SAY).
ANSWER: **France** [or **French Republic**; or **République française**]

Two trains start 400 meters apart and begin traveling towards each other at 20 meters per second. A fly begins on one train, flies to the other, and back and forth until the trains collide. If the fly flies at a speed of 40 meters per second, how far does it travel before it is smushed between the trains?
ANSWER: **400 meters**

The mythology of what people includes a goddess of the sea and the underworld named Sedna?
ANSWER: **Inuit** people [or **Eskimo**; prompt on Native Americans]